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"Viewing State Determination Apparatus for Television Receiver"**

(from the Brief Description of the Drawings section)

Fig. 2 is a block diagram showing a configuration of one embodiment of the present invention.

(from the Description of the Embodiment section)

The audio signal from the television broadcast wave receiving circuit 204 is output from the variable band-pass filter 230 at an energy having fixed spectrum, rectified at the low-pass filter 231, converted into a digital signal by the A/D 8-bit converter 232, and transmitted to the bus 202.

Meanwhile, the SIF signal from the SIF sensor 209 of the television receiver is amplified in the amplifier 210, FM-detected by the FM detector circuit 235, and input into the audio analog switch circuit 221. Similarly to as described above, this signal is output from the variable band-pass filter 227 at an energy having fixed spectrum, rectified at the low-pass filter 228, converted into a digital signal by the A/D 8-bit converter 229, and transmitted to the bus 202. The digital signals converted from the audio signal being received by the television receiver 103 and the audio signal being received by the television broadcast wave receiving circuit 204 are processed by the MPU 201 and judged whether or not the channels match, so as to determine the viewed channel of the television receiver 103.

[Claim]

A viewing state determination apparatus for television receiver within a video system composed of various video-related equipments such as video tape recorder, video disc player, video game device, and laser disc device connected to a television receiver, the apparatus comprising:

means for determining a viewed channel of the television receiver by comparing an intermediate audio frequency from the television receiver and an intermediate audio frequency from a television broadcast wave receiving circuit within the viewing state

determination apparatus;

means for determining a viewed channel of the television receiver by means of a spectrum of an audio signal from the television broadcast wave receiving circuit and an audio signal from the video tape recorder;

means for determining state of use of audio and video terminals of the television receiver and the various equipments; and

means for determining recording/reproducing state of the video tape recorder.

[Fig. 2]

- 101 VTR sensor
- 202 bus
- 203 distributor
- 204 television broadcast wave receiving circuit
- 205 synchronization separation circuit
- 206 phase comparator circuit
- 207 synchronization signal phase comparator circuit
- 208 low-pass filter
- 210 amplifier
- 211 phase detector circuit
- 212 counter
- 213 video buffer circuit
- 214 video analog SW circuit
- 215 video buffer circuit
- 216 synchronization separation circuit
- 218 band-pass filter
- 219 amplifier
- 220 rectifier
- 221 audio analog SW circuit
- 222-225 audio combiner circuit
- 226 audio analog SW circuit
- 227 variable band-pass filter
- 228 low-pass filter
- 229 A/D 8-bit converter
- 230 variable band-pass filter

231	low-pass filter	
232	A/D 8-bit converter	
233	current transformer	
234	band-pass filter	
236	TV speaker	
input from 202 to 204	control signal	
output from 208	synchronization signal comparison signal	
output from 212	SIF comparison signal	
input from 202 to 212	counter reset pulse	
output from 216	VTR on/off signal	
input from 202 to 214	video analog SW control pulse	
output from 220	VTR recording on/off signal	
output from 232	A/D converter signal from TV broadcast wave receiver side	
input from 202 to 230 and 227	signal for band-pass frequency	
output from 229	8-bit A/D converter signal from TV/VTR/game side	
input from 202 to 221	audio analog control signal	
input from 202 to 226	analog control signal	
output from 233	TV on/off signal	
	game on/off signal	
	VTR mechanics on/off signal	